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RHUS AND ITS ALLIES

BY T. D. A. COCKERELL

The old genus *Rhus* has at various times been divided to form new genera. Authors to-day do not agree in their treatment of it. *Rhus* and *Cotinus* are generally recognized, the former containing very diverse elements. Dr. Small (Flora of the South-eastern States) separates four genera, *Cotinus*, *Rhus*, *Metopium* and *Schmaltzia*. Dr. Greene (Leaflets, 1905) calls Dr. Small's "*Rhus*," *Toxicodendron*, while part of his *Schmaltzia* is considered to be true *Rhus*.

At first sight, the separation of so many genera may seem questionable. In Dr. Small's table we find "Drupe with a glabrous outer coat; stone ribbed," and "Drupe with a pubescent outer coat; stone smooth," given as differential characters. Why might not these differences arise all at once, by mutation, in different series? What proof is there that they imply a deep-seated and fundamental segregation of types? I have before me a little piece of *Ceanothus velutinus laevigatus*, T. & G., from Ward, Colo., with many fruits. These are 3-lobed as usual, *except one, which is regularly and completely 4-lobed*. Is not this as good a difference as "drupe pubescent," and have we two genera here on this one fragment of a single plant?

There are, however, other reasons for supporting the dismemberment of *Rhus*. Judge J. Henderson and Dr. F. Ramaley, of the University of Colorado, recently made an expedition to the famous Tertiary beds of Florissant, Colorado, and brought back a fine series of fossil plants. At Fossil Stump Hill, they obtained a beautiful specimen of *Rhus*, which is now before me. It is the *Rhus coriarioides* Lesquereux, Cret. and Tert. Floras, 193. 1883. It is more perfect than the single specimen known to Lesquereux, as the tips of most of the leaflets are preserved. It is so close to *Rhus hirta* that there is little on which to separate it, beyond the fact that the tips of the leaflets are more produced and tapering, the distance from the last serration to the apex being about 16 mm., in a leaflet 60 mm. long. So it appears that away back in the middle of Tertiary time the *hirta*-group (*Rhus* of Greene, part

of *Schmaltzia* of Small) was perfectly differentiated. More than this, true *Schmaltzia* is also represented at Florissant; the species being *Schmaltzia vexans* (*Rhus vexans*, Lesq., *l. c.*, 195); and, says Lesquereux, this also scarcely differs from living forms. The fact that these groups were wholly separated so long ago, indicates that Greene is right in regarding them as different genera, and that Dr. Small should not be followed in uniting them under *Schmaltzia*. The Florissant flora also contains a *Cotinus*, namely *Cotinus fraterna* (*Rhus fraterna*, Lesq., *l. c.*, 192), closely allied to the *Cotinus Palaeocotinus* (*Rhus Palaeocotinus* Saporta) and *C. cotinus*, of Europe, the first being fossil, the other living.

When we consider the transformations undergone by the vertebrates since these venerable plants flourished, we cannot help feeling impressed with the permanence of types existing among not merely the lower plants, but the higher as well. It would seem that in estimating genera, such facts should count for something; and we should not be guided quite so much by the presence of conspicuous outward marks.

BOULDER, COLORADO.

PROCEEDINGS OF THE CLUB

NOVEMBER 29, 1905

This meeting was held at the New York Botanical Garden, with Vice-president Underwood in the chair. Twenty persons were present.

Dr. D. S. Martin exhibited specimens of glassy cinders formed by the burning of masses of rice-hulls near Charleston, South Carolina, illustrating in a striking manner the presence of silica in these hulls.

The announced paper of the afternoon was by Dr. N. L. Britton, under the title of "The North American Cactaceae." The speaker remarked that the Cactaceae of North America were being carefully studied by himself in coöperation with Dr. J. N. Rose, of Washington, in anticipation of preparing a systematic account of this group for the "North American Flora." The Mexican forms have been extensively collected by Dr. Rose and